Ntsako Mbhalati

Software Engineer
Tzaneen, Limpopo
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Software engineer with a strong foundation in Mathematics and Statistics, driven by curiosity and a passion for solving complex problems. Proficient in JavaScript/TypeScript, Python, and Go, with a specialization in web and software development. Keenly interested in data analysis and machine learning, and focused on learning, growth, and creating impactful, scalable solutions.

Education

University of Limpopo   **Jan 2020 - Nov 2024**
Bachelor of Science in Mathematical Science (Majoring in Mathematics and Statistics)
Key modules: Complex Analysis, Mathematical Analysis I & II (Real Analysis), Abstract Algebra, Applied Linear Regression, Design and Analysis of Experiments, Time Series Analysis, Sampling Theory.

The King's Court Christian School   **Jan 2008 - Jan 2016**
NQF Level 4 Senior Certificate
Key subjects: Mathematics, Physical Sciences, English Home Language, Life Sciences, Geography, Life Orientation, Afrikaans First Additional Language.

Professional Experience

Software Developer (Contract)   **Nov 2024 – Present**
College Connect UK | Remote
Currently developing a Student Management Dashboard to streamline the management of international student university application workflows.
- Developing a full-stack application using Next.js, React, PostgreSQL, and Prisma ORM.
- Designing intuitive interfaces with ShadCN UI and Tanstack React Table.
- Implementing authentication and email automation via Resend.
- Ensuring scalable, type-safe development with TypeScript.
- Building dynamic user management and advanced functionality.

Software Engineer   **Sep 2023 – Present**
Christian Revival Church Polokwane | Polokwane, Limpopo
Responsible for designing, developing, and maintaining the church's main website (crcplk.co.za).
- Built and delivered the website using Typescript, React, Next.js, and Tailwind CSS.
- Designed intuitive UI/UX in Figma, ensuring responsive and visually appealing layouts.
- Implemented features including SEO optimization, CRUD operations, user authentication, and Yoco payment integration for a seamless user experience.
- Delivered a functional and user-focused solution aligned with organizational goals and values.
- Collaborated with church leadership to ensure the website met organizational needs and supported key community initiatives.

Front-End Engineer   **Dec 2024**
Skyscanner | Virtual Experience Program (Forage)
Completed a simulated virtual experience as a front-end engineer at Skyscanner.
- Built a web application using React and SCSS.
- Utilized Skyscanner's open-source Backpack React library.
- Customised my application and ran automated tests to ensure it met quality standards.

Solutions Architect   **Dec 2024**
AWS | Virtual Experience Program (Forage)
Completed a simulated virtual experience, designing scalable hosting solutions using AWS Elastic Beanstalk.
- Developed scalable hosting architecture to address client growth and performance challenges.
- Presented the solution in clear, plain language, ensuring client understanding of functionality and cost implications.

Projects
Bird App   **Jul 2024 - Dec 2024**
Live link: [Bird App](). **Github repo**: [CN-M/bird-app]().
Built a social media platform allowing users to post, comment, like, follow, and bookmark content.
- Developed a full-stack social media platform using React, TypeScript, Node.js, Express, Prisma ORM, and Redis.
- Implemented user authentication with JWT, dynamic feeds, post management, and user profiles.
- Integrated Redis for caching and PostgreSQL for database management.
- Focused on scalable architecture, performance optimization, and full-stack development.
- Delivered a seamless, high-performance user experience with premium features coming soon.

Personal Website   **Sep 2024 - Dec 2024**
Live Link: [cn.mbhalati.com](). **Github repo**: [CN-M/mbhalati]().
Designed and developed a personal website and blog currently in production.
- Designed with Figma and styled with Tailwind CSS and ShadCN UI for a responsive, user-friendly design.
- Developed full-stack functionality using Next.js, TypeScript, React, and PostgreSQL with Prisma.
- Integrated Spotify API for fetching fresh data and Google OAuth for secure login.
- Built a markdown-based blog with MDX, including CRUD functionality for guest users and functioning contact forms with email notifications.

Core Skills
Programming Languages: JavaScript/TypeScript • Python • Go • SQL
Databases & Caching: MySQL • PostgreSQL • MongoDB • Redis
Frontend: React • Svelte • htmx • Redux • Zustand • HTML • CSS • SCSS • Tailwind CSS
Backend & Full-Stack: Node • Express • NextJS • SvelteKit • Flask • Django • Prisma • JWT
Tools & Platforms: Git • GitHub • Figma • Jest • Cypress • Playwright • Vite • Bash • Linux • Google Cloud Platform • Vercel • Railway • Sanity.io
APIs: REST APIs • GraphQL
Mathematical & Statistical Analysis: Multivariate Statistics • Regression Analysis • Regression Models • Time Series Analysis • Complex Analysis • Abstract Algebra • Real Analysis

Languages
English (Native), Xitsonga (Proficient)